



myFormatFactory

all you wanted to know about file formats

Audio

Image

Video

Documents

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## The Best Audio Format?

There are so many audio formats available that the question often arises – which is the best audio format? Unless one is tech-savvy, it is but natural to wonder. So, which is the best audio format? The answer in one simple sentence is – there is no “best” audio format.

No best format? Yes, like with everything else, here, too, it depends. It depends on a lot of things – like what you need the format for, what your requirement is, and so on. This is because each audio format suits a different purpose. Let's get into this a little more.



If what you are looking for is quality of sound, then any lossless codec is fine since it gives you the exact same quality as the original source. There are several lossless codecs available, and each one suits a different purpose. For example if you want to add files to your portable player or record a voice through a microphone, then WMA is best. Besides the quality, WMA is widely popular because of its compatibility, versatility, and soft and hardware supports. But if you are streaming music or want to preserve a favorite album, then FLAC is the best format. FLAC is the best format. FLAC is also best for your speaker system or headphones because of its high bitrate.

Ogg Vorbis is also highly popular because of its excellent sound quality. Although a lossy codec, it handles quality superbly, especially in stereo music where it uses variable bit encoding to handle complex frequency ranges.

Sometimes saving space is more important than quality. In that case, lossy formats are recommended. Lossy audio formats are smaller in size since they discard information it considers unimportant during the encoding process. MP3 is the best when considering saving space since it also has near CD quality and is widely supported by both computers and players. AAC is another best if space is a problem but flexibility and versatility is also needed. In case of extreme space shortage, Monkey's Audio and OptimFROG are best because they have the smallest sizes... but they do take a lot more time to encode. For e-books, MP3 is best as it is easiest to handle and can be played back by most devices. So, which is the best audio format? Well.... It depends.



How to make audio files smaller to fit more music on your portable player?



We all want more for less! We will not speak about quality assuming that portable players are not home stereo systems and do not produce that high quality anyway. Besides, numerous tests show that average listeners do not distinguish lossless WAV from 192 kbps MP3.

There are several ways to make audio files smaller in size. Everything depends on the source format. If you have a track in uncompressed or lossless compression formats (WAV, AIFF, AU, CDA, FLAC, APE, WV, TTA, M4A, WMA lossless, or OFR) you should convert it to a lossy compression format (MP3, OGG Vorbis, WMA lossy, AAC, MPC). That will significantly reduce the size of your track. If you convert the whole album you save megabytes of space. Another case is when you have a track in a lossy compression format and want to make it even smaller. For example, you have an MP3 file - can you reduce the size? Sure you can. The easiest way is to lower bit rate. Bit rate defines how much physical space one second of audio takes in kilobits. The lower bitrate - the smaller file size. We do not advise to go lower than 128 kbps.

You can also convert your MP3 file to the format with a better compression scheme. But it depends on the certain file. Many people convert MP3 to AAC to gain free space but you won't save that much (some dozens of kilobytes on each track). You can also convert to MPC format which compresses music very well but .mpc files are not supported by most of portable players. The only way is to test yourself. Convert your files to different lossy formats and decide which is best for you.





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Create Your Own Audio CDs To  
Take Music To The Car



Terrible traffic jams and eco problems do not prevent us from buying new cars. More cars lead to more traffic jams and we spend more time in the car. So the first task is to make our cars comfortable. Good chairs and favorite music can do wonders;)

So let's create your own audio CD with the music you like best. Most car players support CDA, MP3 and WAV files. CDA files can be found on any commercial CD purchased. MP3 and WAV can be purchased online or created out of other audio formats.

Case 1. You have a digital collection of music in different formats.

Solution: Convert your tracks to MP3 with Factory Audio Converter. Then burn an audio CD with free built-in Windows CD burner.

Case 2. You have several CDs and want to create your own CD with the selected songs.

Solution: First, get MP3 out of your physical CDs. Insert a disc and launch Factory Audio Converter. Select Rip CD option. Factory Audio Converter will most accurately rip your CDs to MP3. Second you burn the resulting MP3s to a CD.

Two easy ways to enjoy the music of YOUR choice in the car.



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Audio Formats - grasp  
the idea of each



We can't imagine our lives without music today. It accompanies us at home, in the office, at school or college. It is in our music systems, car players, cell phones, TV boxes, in shops and parks. Different audio formats make music most compatible with different devices - you won't upload a 3 Mb WAV track to your iPod:)

Looking at all those dozens of different formats is a shock to any average user. We created a simple way to tell you about each audio format, its advantages and disadvantages and also cases when it should be used. So that you could make the best choice.

Click any format in the upper menu and find most useful info about it. Below are comprehensive articles comparing those audio formats that are similar. Step-by-step tutorials on your left will show you how to convert your audio files or rip CD.

Audio formats are often divided into three groups:

- Uncompressed audio formats: WAV, AIFF, AU, CDA.
- Lossless compression formats: FLAC, APE, WV, TTA, M4A, WMA lossless, OFR.
- Lossy compression formats: MP3, OGG Vorbis, WMA lossy, AAC, SPEEX, MPC, VQF, RA, VOC.

### What is MP3?

MP3, which is an acronym for MPEG-1 Audio Layer 3, is an audio encoding format. It is one of the most popular audio compression and decompression (codec) format today because of its ability to put music into manageable files, thus making downloading over the internet easy. By removing all extra parts, it compresses large audio recordings with a ratio of 12:1 while retaining original audio quality.

The sound quality of an MP3 is dependent on several factors – quality of the original audio source, the encoding software used, and the bit rate used. Most encoders allow you to select the bit rate (amount of data stored per second) yourself, so the right selection at the right places is an important factor.

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## What is MP4?

MP4 is the file extension for the MPEG-4 container format. More commonly known as MPEG-4 AVC (Advanced Video Coding), it can contain all kinds of multi-media content - like audio, video, 2D and 3D graphics, and animated avatars, besides user interactivity features. An MP4 file uses separate compression schemes for audio and video. Video is compressed using the MPEG-4 encoding algorithm, while the audio is compressed using the AAC compression format. But since MP4 is a container format, it can also contain an MPEG-2 AAC or an MP3 bit stream. These different formats are given in the header of an MP4 file, specifying the exact object types in the container.

MP4 is fast taking over MP3 in popularity. MP3 has so far been the most popular and universally used multimedia format, but since capacities and bandwidth have dramatically increased in the past few years, people seem to want video information as well. Just audio is not good enough. MP4, despite containing both audio and video, has a very small file size and can be sent over the internet at great speed. The file can be watched in perfect quality immediately upon receiving. This has made MP4 more popular than MP3.

The MP4 container format is also used by iTunes, and with iPods and Play Station Potable (PSP), thus making the format even more widely used.

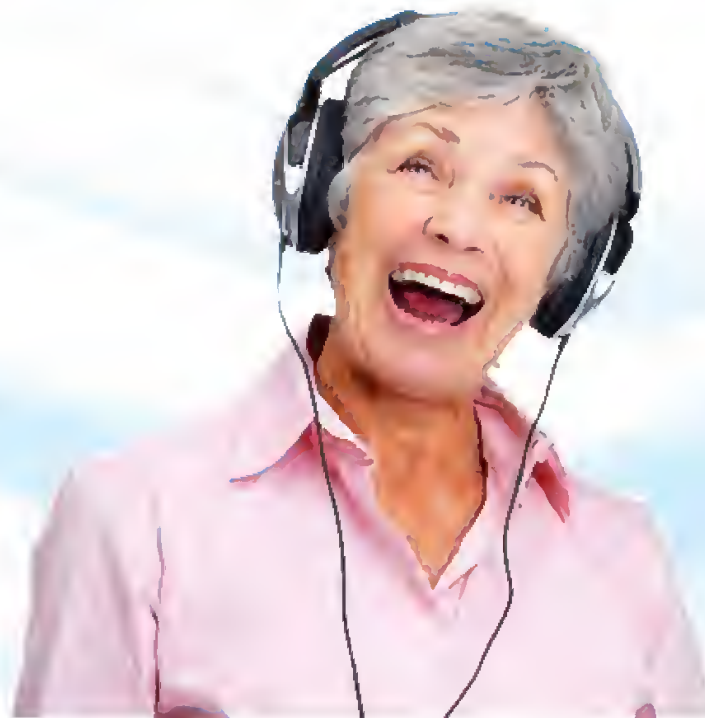
## What is AAC?

AAC, or Advanced Audio Coding, is a lossy compression and encoding algorithm for digital audio. Designed by the MPEG group that includes Dolby, Sony, Nokia, FhG, and AT&T, it is believed to be the successor to MP3. AAC was officially declared an international standard in 1997. AAC is the default audio format for iTunes, iPod, and iPhone.

The AAC format gives developers increased flexibility over MP3, thus allowing them to develop parallel encoding strategies which in turn give more efficient compression. The two main coding strategies used, which greatly reduce the amount of data, are discarding of irrelevant signal components, and eliminating redundancies in the coded audio signal. Other strategies include adding of internal error correction codes, processing the signal according to its complexity, and applying of a special algorithm to each frame in order to prevent corrupt samples.

Because of all its advantages, AAC has become widely popular and has replaced MP3 to a great extent. It is today the preferred audio codec for the internet, and the wireless and digital platforms.





## What is FLAC?

FLAC, which stands for Free Lossless Audio Codec, is a file format for audio data compression. As the name suggests, it is a free (fully open to the public to be used for any purpose free of cost) and lossless (incurs no loss of information) audio codec.

FLAC works like ZIP does in the sense that it compresses information, only that it's for audio. FLAC's compression ratio is about 2:1. It is also similar to MP3 with the difference that it is lossless, meaning that the audio may be compressed without any loss of information or audio quality.

Besides the frame CRCs and the MD5 signature, FLAC also has a verify option to decode the encoded stream in parallel to the encoding process. This compares the result to the original and aborts any error if there is a mismatch. This feature makes FLAC most suitable for audio archiving.

FLAC supports tagging, cover art and fast seeking, and is itself supported by most operating systems – like Unix and Unix-like (including Linux, BSD, Solaris, IRIX, and Mac OS X), Windows, Amiga, BeOS, and OS/2 operating systems. Most consumer electronic devices – including portable players, home stereo equipment, and car stereo – support FLAC. If not you may convert FLAC to MP3 or other file types with Factory Audio-Converter.

## What is CDA?

CDA, or CD Audio Tracks (.cda), are audio files that can be stored on CD media. These small files, only 44 bytes each, were created by Microsoft Windows for every track of an audio CD.

The .cda files are only representations of CD audio tracks and do not contain the actual PCM (pulse code modulation). What they have is indexing information that various programs may use to play (or rip) the disc, and tell the beginning and the end of a track. In other words, each .cda file can be described as a pointer to the location of each track on a CD. Each of the 44-byte tracks contains track times and a special Windows shortcut which helps users to access the specific audio tracks. In short, the files do not contain actual audio data, but only encode music on compact discs.



CDA files can only be played from a CD-ROM, so if a file is copied to the computer hard drive, it cannot be played. The files first need to be converted to another format (like .wav or .mp3) in order to be stored on a hard disk. This is because the way information is stored on an audio CD differs greatly from the way it is on a computer hard drive. On a CD, data is stored in a raw 16-bit digital PCM stream, which is a format not recognized by Windows PC. CDA is, therefore, not a true audio format, but a way in which Microsoft Windows interprets an audio CD.

#### What Is WMA?

WMA, or Windows Media Audio, is a proprietary compressed audio file format developed by Microsoft. Conceived as a competitor to MP3, WMA has now become a competitor to AAC and OGG as well. WMA is a versatile lossless audio format that is capable of both VBR (Variable Bit-rate) and CBR (Constant Bit-rate), thus allowing allocation of more bits (less compression) to the more complex parts of an audio track. This gives better and uniform audio quality across the track. WMA also supports multichannel and high resolution audio. It can sample audio signals at up to 48 kHz (48,000 times per second).

WMA also supports DRM (Digital Rights Management). This allows downloading of music from such services as Yahoo Music, Napster, and Virgin Digital. WMA is also an ideal format for ripping audio CDs, giving the same audio quality as the original audio track.

#### What is WAV?

WAV (or WAVE), shortening for Waveform audio format, this standard Microsoft and IBM audio file format was created for storing audio on PCs. It is a version of the RIFF bitstream format method good for storing data in "chunks", and thus also close to the IFF and the AIFF format used on Amiga and Macintosh computers, respectively. It is the primary audio format which is now in use on Windows systems for raw audio.

WAV format contains uncompressed audio in PCM format (i.e. pulse-code modulation). Such lossless storage method keeps all the samples of an audio track. That is why WAV format is extensively used by professional users and audio experts for maximum audio quality. WAV audio can also be edited and manipulated with relative ease using software. It is the standard audio file format for CDs.